Amendments to the Specification:

Please amend the second paragraph on page 1 as follows:

It is particularly important to monitor continuously cardiovascular parameters in critically ill patients, for example during surgical procedures performed under total anesthesia, or in case of a critical condition. Of special importance are the parameters that characterize the left ventricular pumping action. It is known from the prior art to determine these parameters by means of pulse contour analysis, for which technical solutions such as the commercially available PiCCO system by Pulsion Medical Systems have been known for some time. With these, the parameters to be determined are calculated from the time curve of an arterially measured pressure. In particular, a pulse contour analysis based on a non-linear ~~wind kessel~~ windkessel model, in which - for example as described in DE 198 14 371 A1 - a non-linear function of the pressure measured close to the aorta is used for the so-called compliance (expandability) of the aorta, usually leads to very useful results. However, in patients receiving mechanical respiration, the validity of the information obtained from such an analysis could sometimes be improved.

Page 18, please amend the second paragraph as follows:

By means of conventional algorithms of pulse contour analysis, the appropriately programmed apparatus 4 calculates the stroke volume (LVSV) (lower diagrams in FIGS. 4a and 4b) of the left ventricle (LV), the stroke volume variation SVV, and if applicable other desired cardiovascular readings. The transmural pressure is calculated as the relevant pressure, according to the following formula:

$$P_{transmural}\cancel{transmural} = Pao - f(C) * P_{\underline{IT}} \cancel{IT}$$

The ~~corrective~~ function f(C) is a function of compliance (C) of the arterial system or primarily the aorta 2, where compliance is preferably determined according to a non-linear ~~wind kessel~~ windkessel model, and the ~~corrective~~ function f(C) can, for example, take the form of

$$f(C) = 1 - \exp(- a * C)$$

with (a) as the adaptation parameter, but which in any case increases monotonically as the compliance increases and may assume values between 0 and 1.